

Chapter 5:

Chronic Disease and Injuries

“Dying is a very dull, dreary affair. And my advice to you is to have nothing whatever to do with it.”

W. Somerset Maugham

“The average, healthy, well-adjusted adult gets up at seven-thirty in the morning feeling just plain terrible.”

Jean Kerr

“The second day of a diet is always easier than the first. By the second day you're off it.”

Jackie Gleason

Chronic Disease and Injuries

Did You Know?

- Cancer of the trachea, bronchus, and lungs accounted for 31.5% of cancer deaths in Greene County from 1990 to 2002.
- Of all cancer deaths from 1990-2002 in Greene County, breast cancer was the third most prevalent cause.
- The number of deaths from alcoholic liver disease in Greene County has steadily increased since 1990.
- The number of deaths from diabetes in Greene County has increased since 1990.
- The majority of unintentional/accidental injuries treated in Greene County emergency rooms from 1994 to 2001 were due to falls.
- The rate of heat-related weather injuries has increased from 1994 to 2001 in Greene County.

Chronic Disease and Injuries

Numerous deaths due to cancer, heart disease, stroke, and other chronic diseases occur every year. Longitudinal studies have shown that both genetic and lifestyle components affect these diseases. In order to decrease the prevalence of chronic diseases, prevention through lifestyle changes and early detection need to occur.

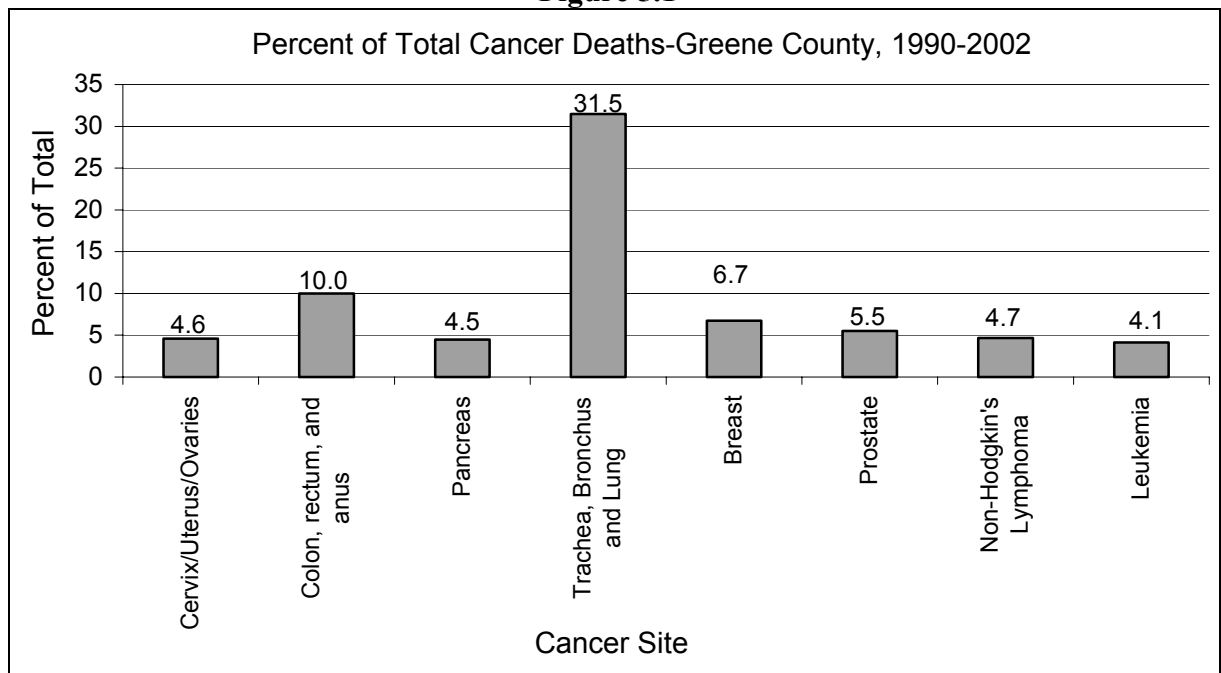
Unfortunately, it is difficult to monitor the incidence of active and developing chronic diseases in the community. This can be accomplished through health surveys that inquire about lifestyle risk factors and diagnosed disease conditions. Federal and state governments conduct these surveys periodically. But this process is cost prohibitive for local agencies so that county-level data is seldom available. This forces local agencies to monitor mortality trends to measure the impact chronic diseases have on the community.

Injuries also have an enormous impact on residents of Greene County. Injuries result in economic losses, as well as disabilities that affect quality and length of life. Some of these negative consequences can be avoided by following proper safety precautions.

Cancer

Figure 5.1 illustrates the proportion of deaths in Greene County by the most common cancer sites. Trachea, bronchus, and lung cancers accounted for 31.5% of the total number of cancer deaths from 1990 to 2002 in Greene County, which is higher than the national rate of 29%.

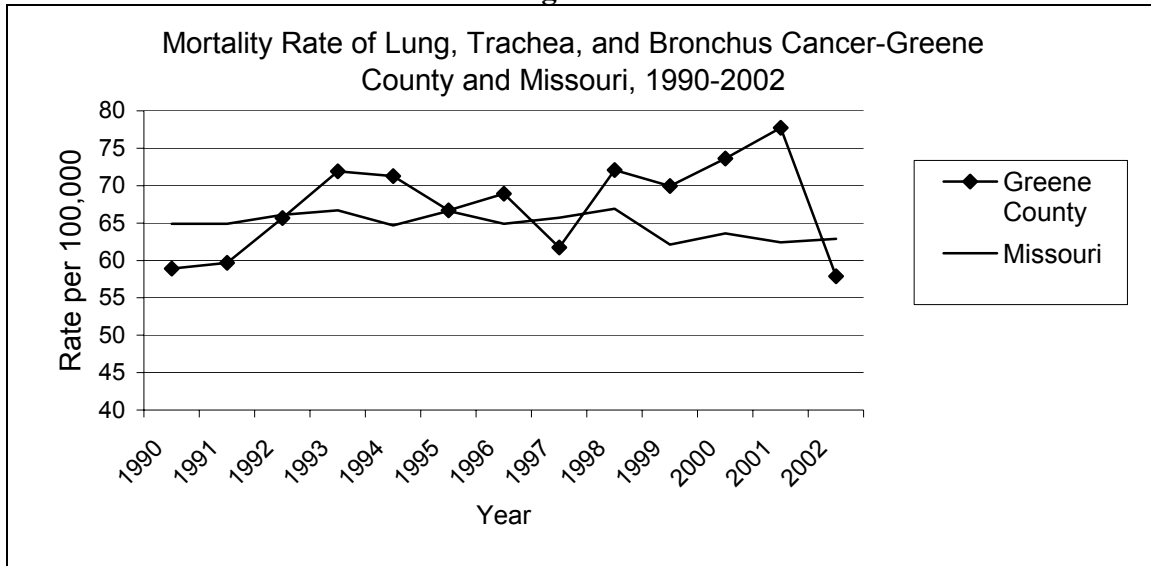
Figure 5.1



Source: Missouri Department of Health and Senior Services; n=6,434

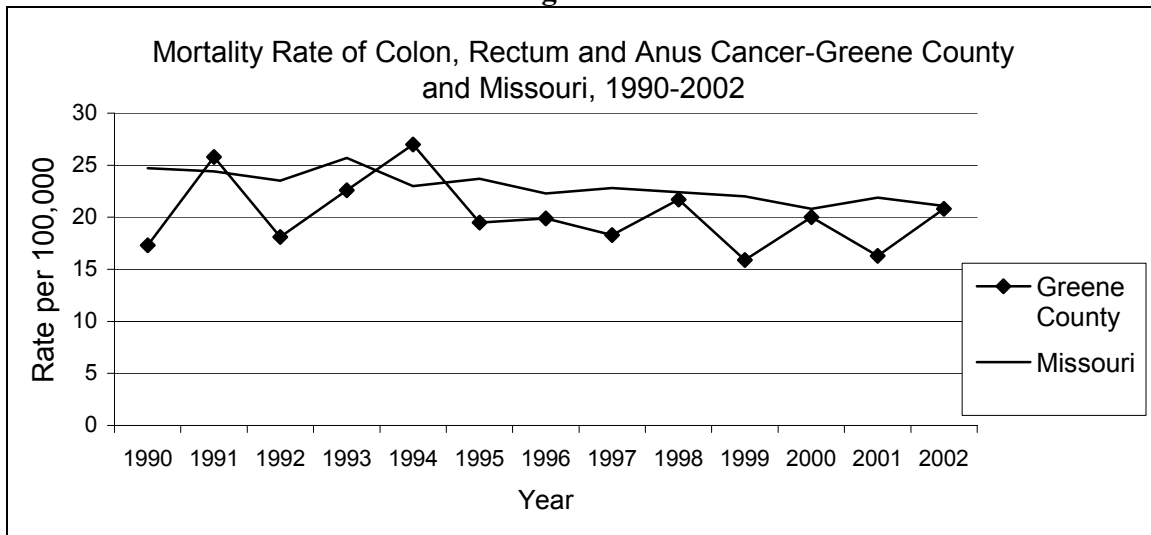
The rate per 100,000 for cancers of the respiratory tract (trachea, bronchus, and lung) for Greene County and the state is plotted in Figure 5.2. The rate for the county has been higher than the state's since 1993, with only two years that were exceptions. The state's rate of respiratory cancer death has fluctuated since 1990 with an overall decreasing trend whereas the county's mortality rate has been higher for much of the past decade.

Figure 5.2



Source: Missouri Department of Health and Senior Services

Figure 5.3

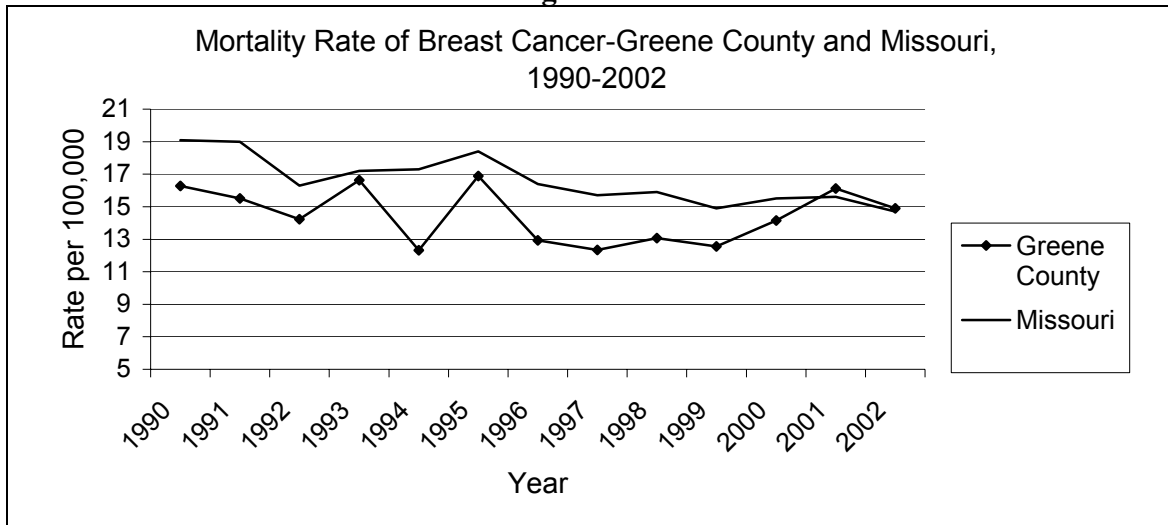


Source: Missouri Department of Health and Senior Services

Figure 5.3 presents the trend for deaths due to colon, rectum, and anal cancers in Greene County. Overall, there is a minor decreasing trend in mortality from this form of cancer in Greene County.

Breast cancer was the third most prevalent type of cancer death in Greene County (Figure 5.1). Compared to the state's rate per 100,000, Greene County has consistently had lower rates during the 1990's. However, since the year 1999, Greene County has recorded an increasing number of deaths from breast cancer and has surpassed the state mortality rate (Figure 5.4).

Figure 5.4

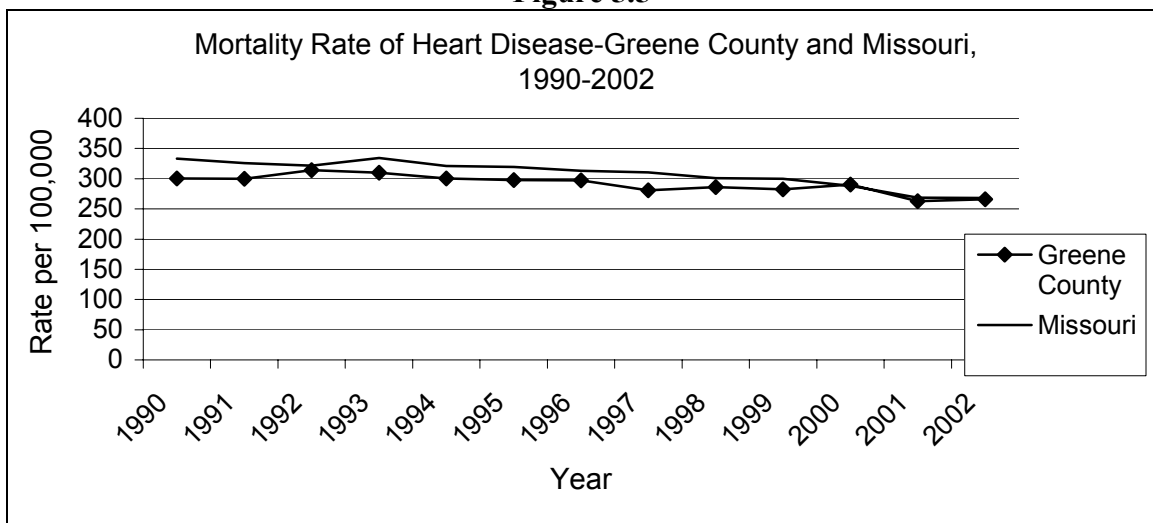


Source: Missouri Department of Health and Senior Services

Cardiovascular and Cerebrovascular Disease

Figure 5.5 illustrates the heart disease mortality rate comparison between Greene County and Missouri. Overall, the rate for Greene County has been slightly lower than the state's. Within the last three years however, the two rates have become almost identical. Both rates have decreased over the past ten years, with Greene County's rate decreasing from 300.2 deaths per 100,000 to 266.2.

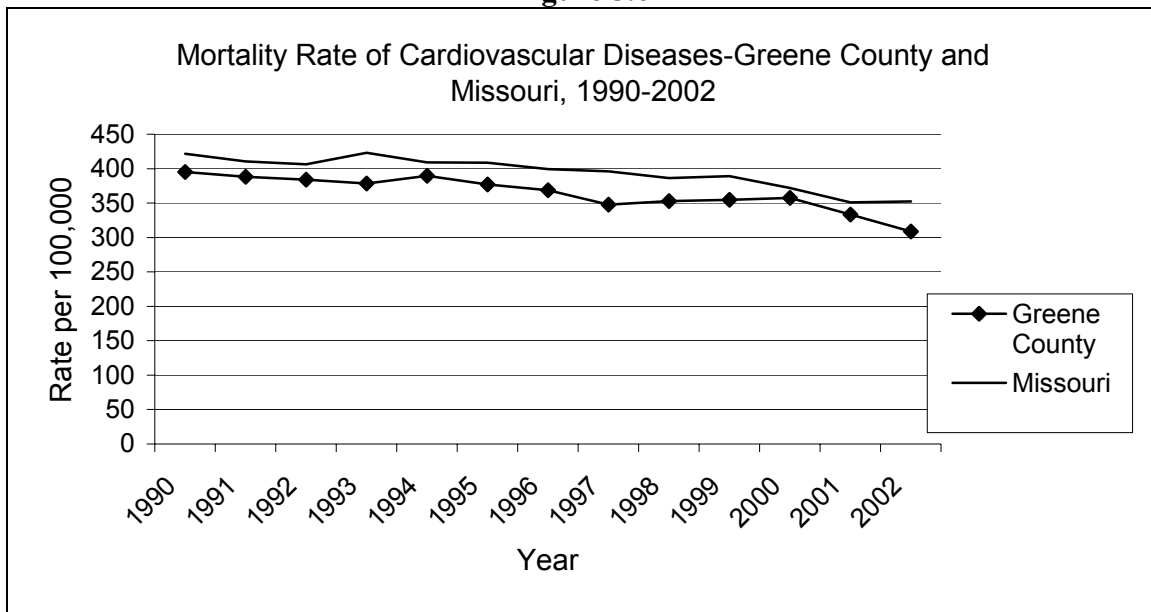
Figure 5.5



Source: Missouri Department of Health and Senior Services

When examining cardiovascular disease in Greene County, a significant downward trend was seen, especially from 2000 to 2002 (Figure 5.6).

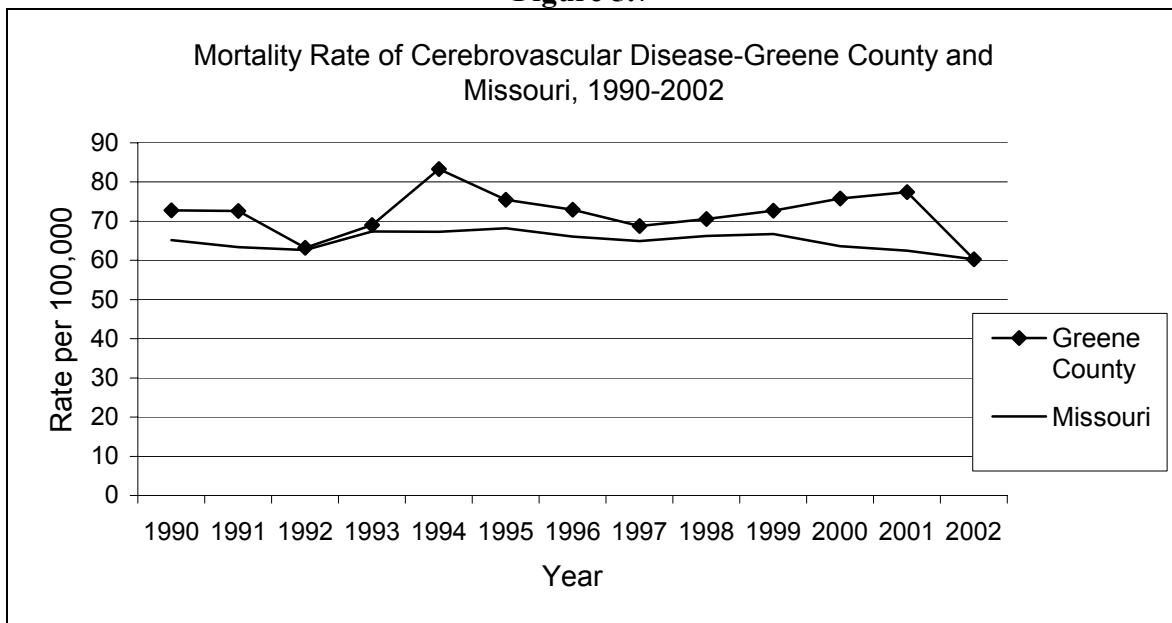
Figure 5.6



Source: Missouri Department of Health and Senior Services

In a comparison of deaths by stroke (cerebrovascular disease), Greene County's rate is consistently above the state's rate (Figure 5.7). However, from 1990 to 2002 the mortality rate for cerebrovascular disease has decreased from a rate of 71.3 deaths per 100,000 to 60.3.

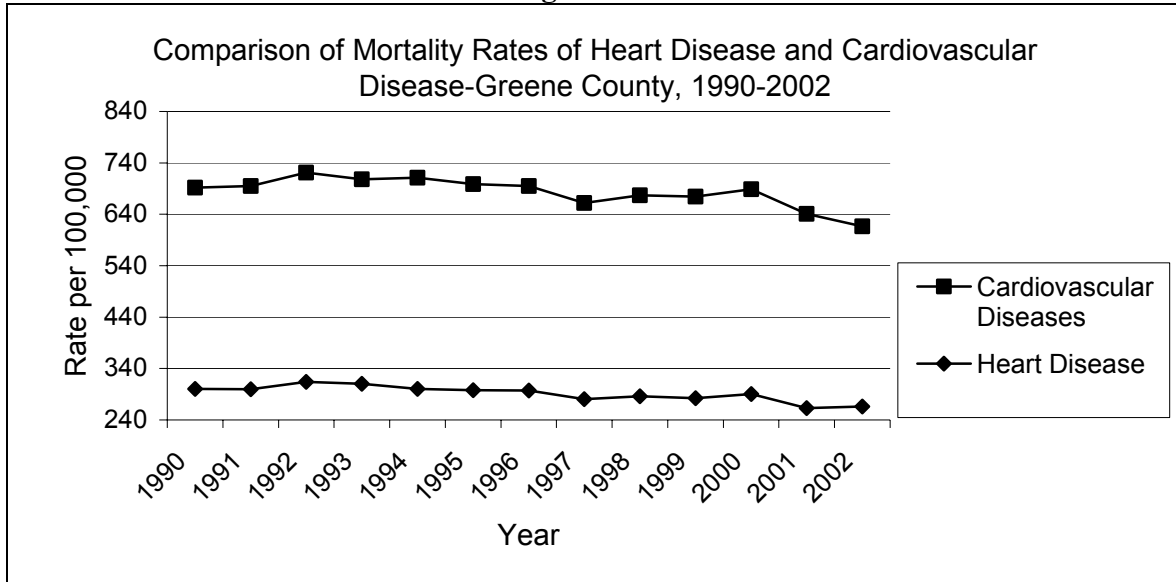
Figure 5.7



Source: Missouri Department of Health and Senior Services

Figure 5.8 provides a comparison between all cardiovascular disease deaths and heart disease deaths. The downward trend in the heart disease mortality rate only contributes slightly to the overall downward trend that is observed for all cardiovascular disease deaths.

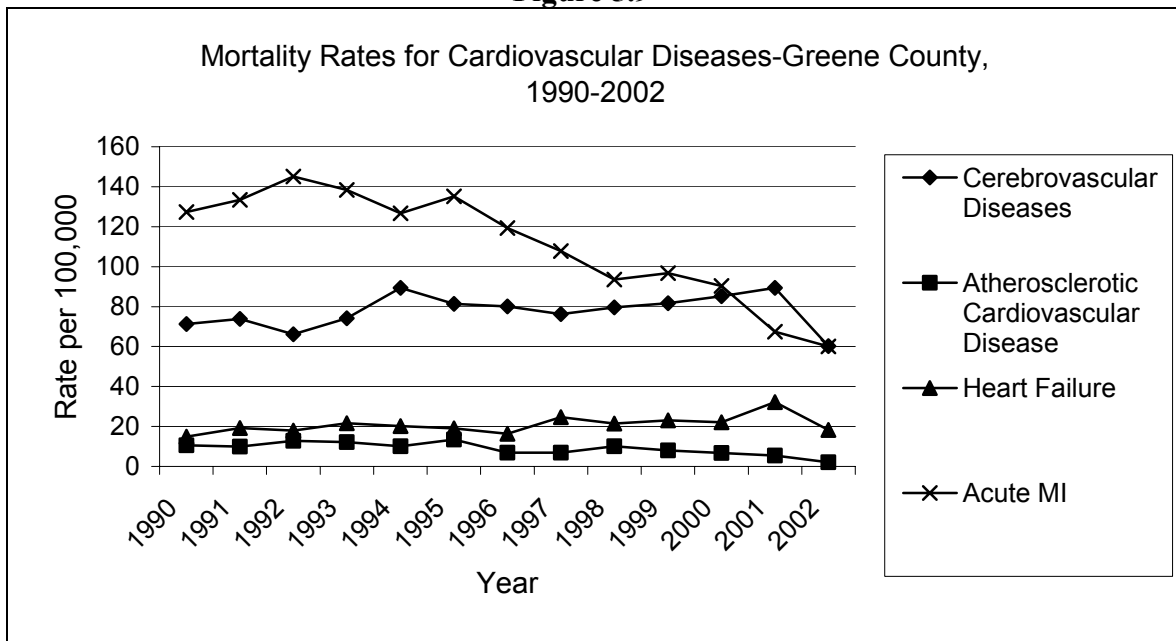
Figure 5.8



Source: Missouri Department of Health and Senior Services

Figure 5.9 provides the mortality rates for other forms of cardiovascular diseases. A significant decrease in the acute myocardial infarction (heart attack) mortality rate is seen, with fairly constant trends for heart failure and atherosclerotic cardiovascular disease deaths.

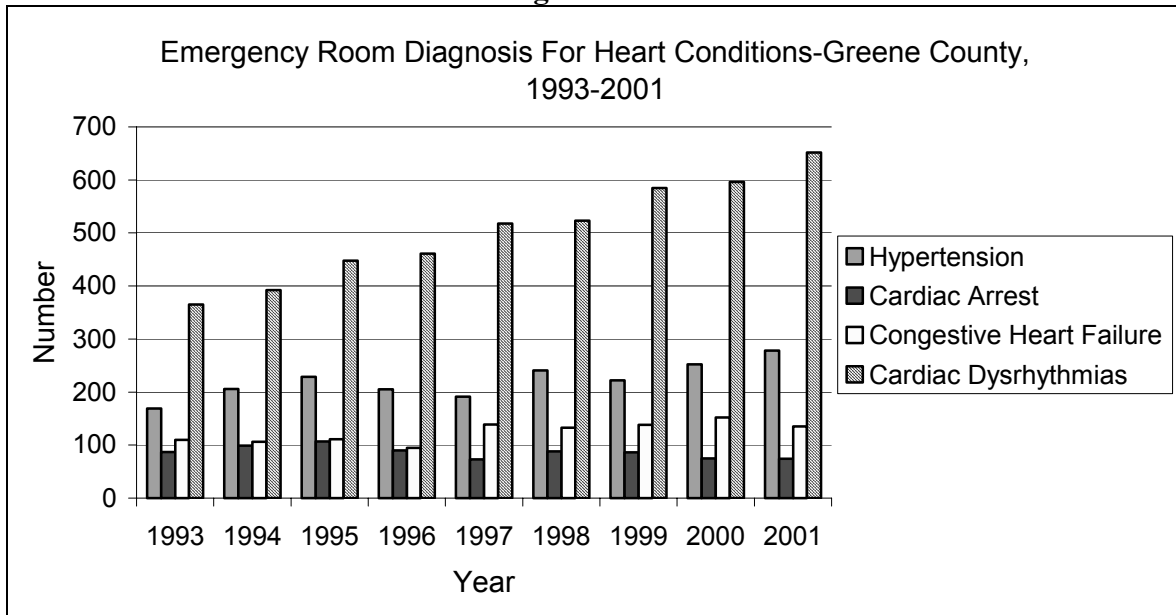
Figure 5.9



Source: Missouri Department of Health and Senior Services

Figure 5.10 displays the numbers for certain heart-related conditions as reported by emergency rooms in Greene County. The number of patients treated with cardiac dysrhythmias has increased since 1993 to 652 cases in 2001.

Figure 5.10

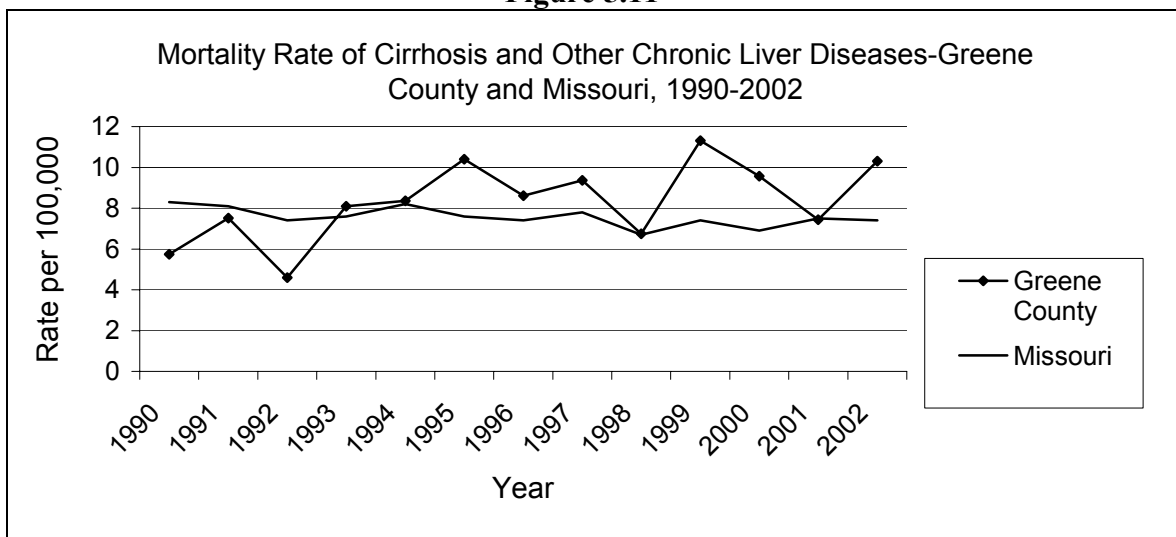


Source: Missouri Department of Health and Senior Services

Liver Disease

Figure 5.11 displays the mortality rates for chronic liver disease in Greene County and Missouri. The Missouri rate has decreased only slightly since 1990, while the county rate has increased from 5.7 deaths to 10.3 deaths per 100,000 by 2002.

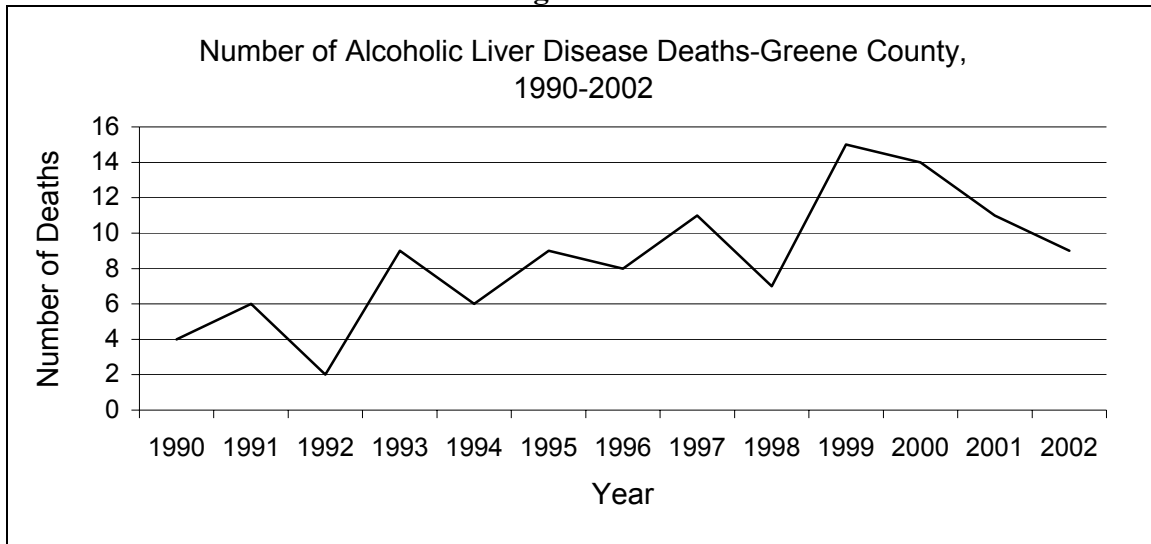
Figure 5.11



Source: Missouri Department of Health and Senior Services

An increase in the number of alcoholic liver disease deaths has been observed (Figure 5.12). From 1990 to 2002 the number of alcoholic liver deaths increased from 4 to 9 deaths per year, with the highest number (15) in 1999.

Figure 5.12

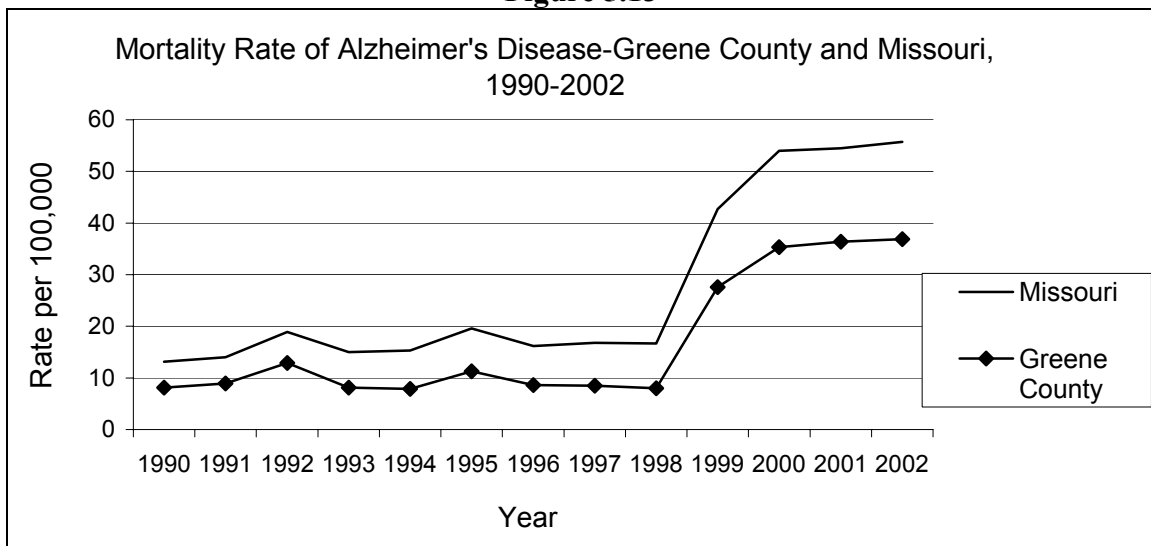


Source: Missouri Department of Health and Senior Services

Alzheimer's

Figure 5.13 shows the mortality rate for Alzheimer's in Greene County and Missouri. The apparent increase in deaths from 1998 to 1999 is due to a change in the classification of causes of death by the Missouri Department of Health and Senior Services.

Figure 5.13



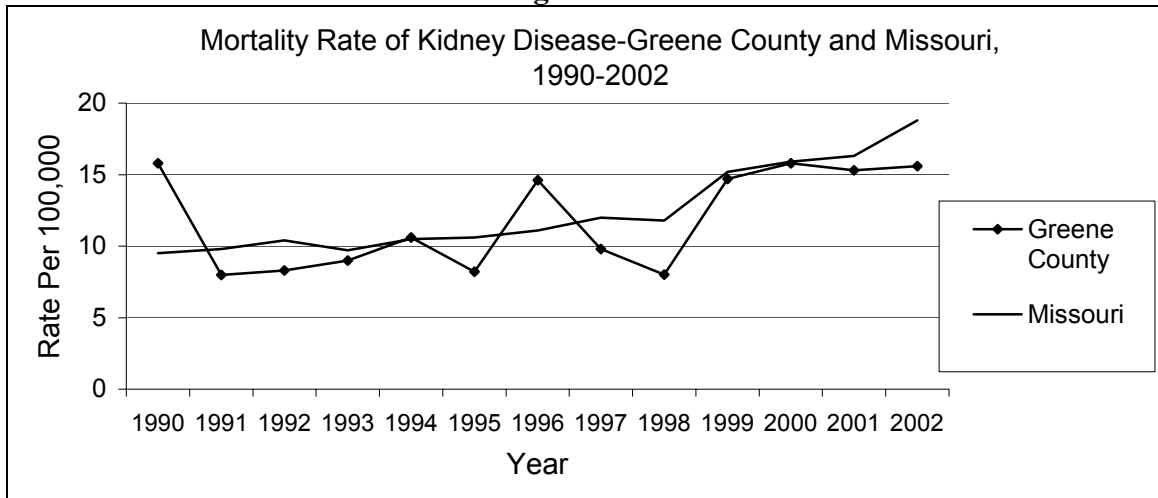
Source: Missouri Department of Health and Senior Services

*A change in the Missouri classification system for cause of death occurred after 1998

Kidney Disease

Figure 5.14 compares Greene County and Missouri mortality rates for kidney disease. Kidney disease mortality in Greene County is fairly constant with periodic increases, as seen in the 1996. The apparent increase from 1998 to 1999 is due to a change in the classification system used to identify causes of death. The years preceding and following the 1998 to 1999 time period appears to indicate a fairly steady rate.

Figure 5.14



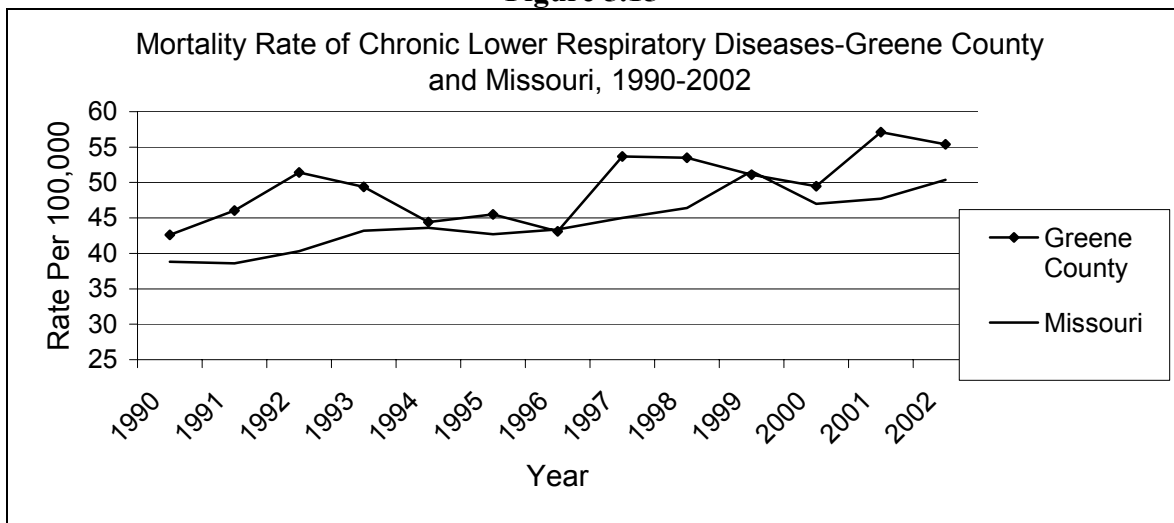
Source: Missouri Department of Health and Senior Services

*A change in the Missouri classification system for cause of death occurred after 1998

Chronic Lower Respiratory Disease

Chronic lower respiratory diseases include: asthma, bronchitis, and emphysema. Figure 5.15 indicates an increasing trend from 42.6 deaths per 100,000 to a rate of 57.1 in 2001 and 55.4 in 2002.

Figure 5.15

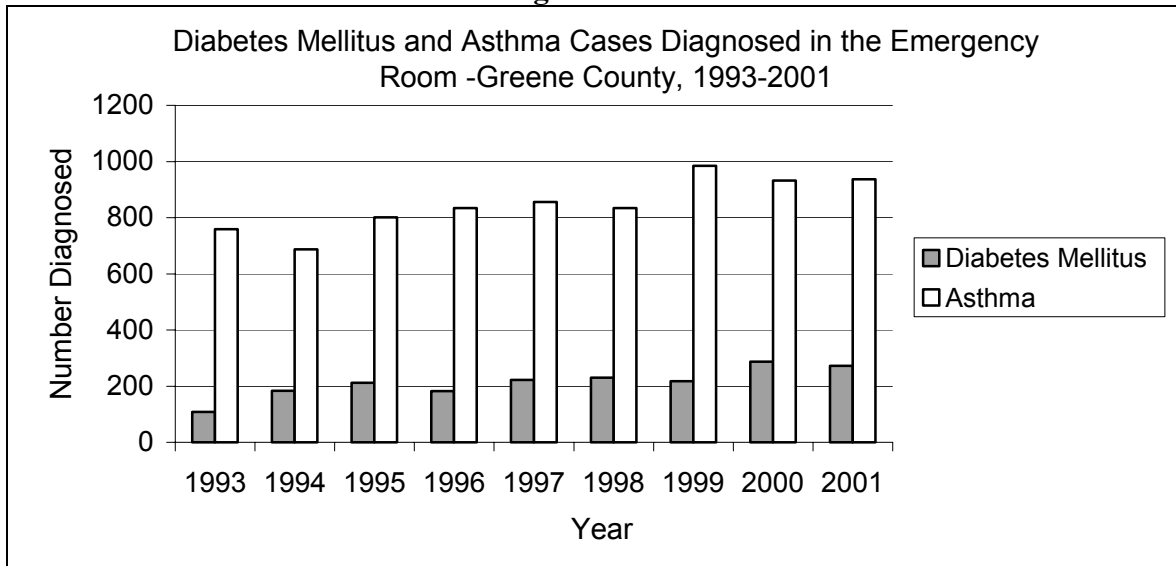


Source: Missouri Department of Health and Senior Services

Asthma, Diabetes, and Obesity

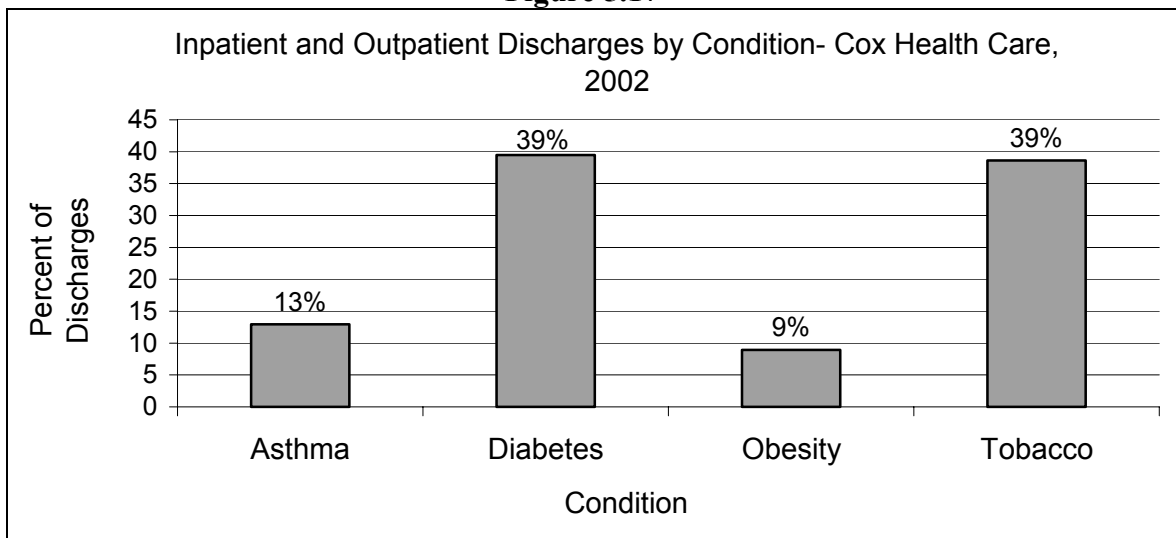
Figure 5.16 displays the number of people with an emergency room diagnosis for asthma and diabetes in Greene County. Diabetes diagnoses in the emergency room increased from 108 in 1993 to 272 by the year 2001. Asthma diagnosis numbers increased from 757 to 937 by 2001. The percentage of patients discharged with asthma, diabetes, and obesity during 2002 from the Cox Health Care system is illustrated in Figure 5.17.

Figure 5.16



Source: Missouri Department of Health and Senior Services

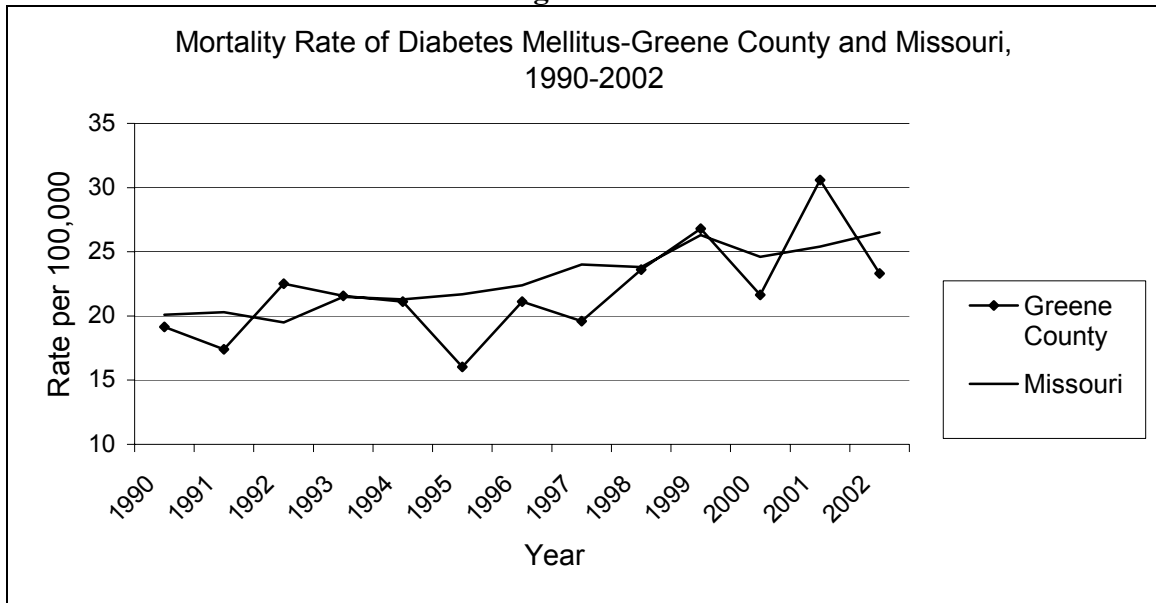
Figure 5.17



Source: CoxHealth, n=60,604

Figure 5.18 displays the mortality rate for diabetes in Greene County and Missouri. The upward trend represents an increase from 19.2 deaths per 100,000 to a rate of 23.3 per 100,000 in 2002 in Greene County.

Figure 5.18



Source: Missouri Department of Health and Senior Services

Table 5.1 lists the number of students with asthma and diabetes in Greene County schools as reported in the Missouri School-Age Children's Health Services Program.

Table 5.1

| Diabetes and Asthma-Greene County Schools, 2001-2002 | | | | | |
|---|--------------------------|---------------|------------|-----------------|------------|
| | Students Enrolled | Asthma | % | Diabetes | % |
| Ash Grove* | 854 | -- | -- | -- | -- |
| Fair Grove | 994 | 119 | 12.0 | 2 | 0.2 |
| Republic** | 3,151 | 182 | 5.8 | 8 | 0.3 |
| Rogersville* | 550 | -- | -- | -- | -- |
| Springfield R-12 | 24,396 | 2,195 | 9.0 | 62 | 0.3 |
| Strafford* | 1,055 | -- | -- | -- | -- |
| Walnut Grove | 312 | 6 | 1.9 | 6 | 1.9 |
| Willard** | 3,313 | 177 | 5.3 | 15 | 0.5 |
| Total | 34,625 | 2,679 | 7.7 | 93 | 0.3 |

Source: Missouri School-Age Children's Health Services Program (MSCHSP)

*Did not report the incidence of asthma or diabetes

**Data from the 2003-2004 school year

Table 5.2a

| Leading Causes of Death-Greene County and Missouri, 1990-2002 | | | |
|--|-------------------------------|--------------------------|-----------------|
| | | Rates per 100,000 | |
| Cause of Death | Total Deaths In County | Greene County | Missouri |
| All Causes | 28,187 | 891.9 | 934.8 |
| Heart Disease | 8,668 | 270.7 | 307.3 |
| All Cancers | 6,434 | 208.6 | 212.6 |
| Lung Cancer | 2,026 | 66.3 | 64.7 |
| Breast Cancer (Female) | 434 | 14.3 | 16.5 |
| Stroke (Cerebrovascular Disease) | 2,341 | 71.8 | 65.0 |
| Chronic Obstructive Pulmonary (Lung) Disease (COPD) * | 1,347 | 46.4 | 44.1 |
| Total Unintentional Injuries * | 930 | 32.7 | 39.7 |
| Motor Vehicle | 542 | 17.3 | 20.1 |
| Pneumonia and Influenza | 803 | 24.5 | 33.8 |
| Diabetes Mellitus | 661 | 21.1 | 23.0 |
| Suicide | 405 | 13.4 | 13.1 |
| Kidney Disease | 355 | 11.1 | 12.4 |
| Alzheimer's Disease | 531 | 15.9 | 10.5 |
| Septicemia | 235 | 7.4 | 9.1 |
| Homicide | 106 | 3.5 | 8.8 |
| Liver Disease and Cirrhosis | 250 | 8.6 | 7.6 |
| AIDS | 341 | 11.9 | 5.4 |
| Smoking-Attributable (est.)* | 4,808 | 169.3 | 174.2 |
| Alcohol/Substance Abuse* | 286 | 10.9 | 10.8 |
| All Injuries and Poisonings * | 1,475 | 52.4 | 64.1 |
| Firearms | 61 | -- | 0.4 |
| Injury at Work * | 50 | 2.0 | 2.4 |

Source: Missouri Department of Health and Senior Service

*Data from 1990-2001

Table 5.2b

| Percent of Total Cancer Deaths by Organ Site-Greene County, 1990-2002 | |
|--|------|
| Lip/Oral Cavity/Pharynx | 1.3 |
| Esophagus/Larynx | 1.7 |
| Liver | 2.4 |
| Melanoma of Skin | 1.6 |
| Cervix/Uterus/Ovaries | 4.6 |
| Kidney/Bladder | 2.2 |
| Meninges/Brain/CNS | 2.3 |
| Other | 10.4 |

Source: Missouri Department of Health and Senior Service, n=6,434

Risk Factors

High-risk lifestyle behaviors can result in the development of many chronic diseases. In the following tables, several behavioral risk factors are presented. This data was collected by the Missouri Department of Health and Senior Services with a questionnaire based on the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance Survey. This data was collected from April 2002 to January 2003 and was released to the counties in October 2003.

Table 5.3 indicates that overall Greene County residents were not significantly different than other state and region residents. However, each of these percentages indicates an area of concern. For example, the self-reported obesity rate of 21.1% and overweight rate of 32.5% signifies the increasing risk that many county residents are developing for chronic diseases associated with being overweight and obese.

Table 5.3

| Behavioral Risk Factors-Greene County Residents, 2003 | | | |
|--|--------------------------|-----------------------------|------------------|
| | Greene County (%) | Southwest Region (%) | State (%) |
| Self Reported Health Status (Fair or Poor) | 17.2 | 18.8 | 16.9 |
| No Health Coverage | 12.7 | 17.2 | 12.8 |
| Physical Inactivity | 21.0 | 24.1 | 24.0 |
| Current Smoker | 23.6 | 26.7 | 26.4 |
| Overweight | 32.5 | 35.6 | 35.3 |
| Obese | 21.1 | 23.4 | 23.4 |
| High Blood Pressure | 28.1 | 27.4 | 28.9 |
| High Cholesterol (35 and Older) | 36.3 | 36.6 | 37.1 |
| Asthma | 9.2 | 11.2 | 10.8 |
| Diabetes | 6.2 | 6.4 | 7.2 |
| Activity Limitation | 17.4 | 17.6 | 17.9 |

Source: Missouri Department of Health and Senior Services, 2003 Health and Preventive Practices Status Report.

*Prevalence rates are adjusted to 2000 US population

Tables 5.4 shows the utilization of screening tests among men and women in Greene County. In Greene County 14.9% of women reported never having had a mammogram. This rate was lower than the Southwest Missouri region, but higher than the state average.

Table 5.4

| Screening Test Utilization-Greene County, 2003 | | | |
|--|------------------------------|---------------------------------|------------------|
| | Greene County (%) | Southwest Region (%) | State (%) |
| Women | | | |
| Never Had a Mammogram | 14.9 | 17.9 | 13.4 |
| No Mammogram or Clinical Breast Exam in the Last Year: | | | |
| 40-49 Years of Age | 46.6 | 52.3 | 49.4 |
| 50-64 Years of Age | 33.4 | 43.3 | 35.0 |
| 65 and Older | 45.5 | 51.3 | 47.4 |
| Never Had a Pap Smear | | | |
| 18-69 Years of Age | 3.5 | 4.5 | 5.1 |
| 70 and Older | 4.6 | 8.6 | 6.4 |
| No Pap Smear Last Year (18-29) | 19.0 | 28.1 | 25.8 |
| No Pap Smear Last 3 Years (30-69) | 15.3 | 13.8 | 13.8 |
| Men and Women 50 Years or Older | | | |
| Never Had a Blood Stool Test | 44.9 | 51.4 | 57.0 |
| No Blood Stool Test Last Year | 72.7 | 74.2 | 77.5 |
| Sigmoidoscopy/Colonoscopy | | | |
| Never Had a Sigmoidoscopy/Colonoscopy | 44.9 | 53.4 | 49.2 |
| No Sigmoidoscopy/Colonoscopy in Last 5 Years | 54.3 | 63.3 | 57.0 |

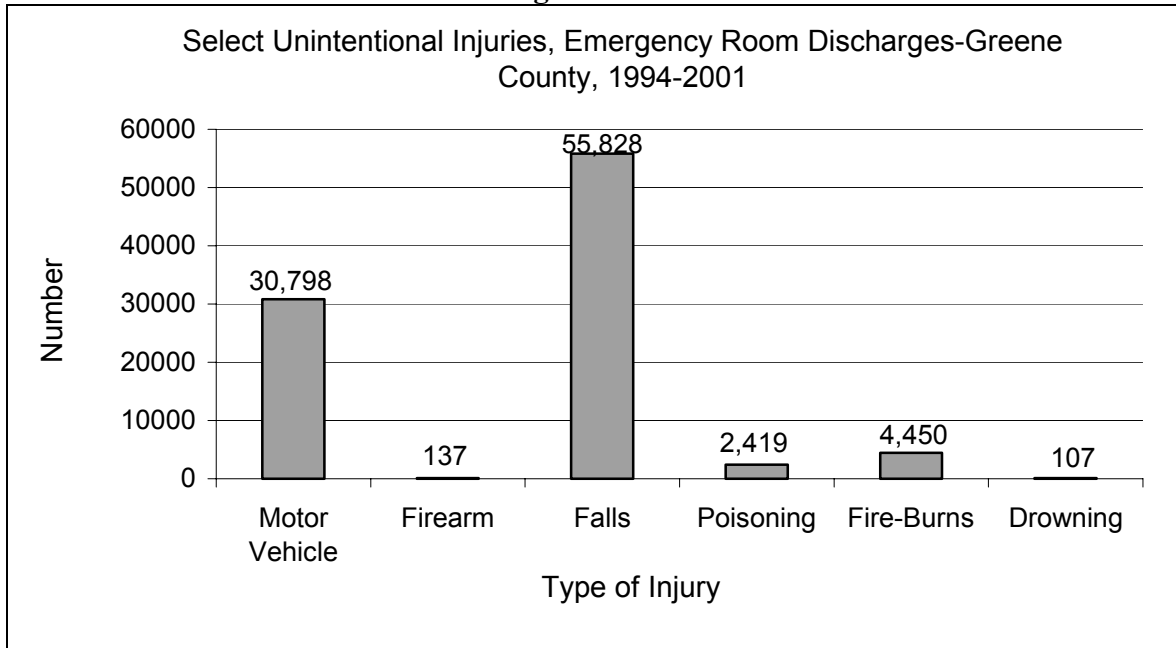
Source: Missouri Department of Health and Senior Services, 2003 Health and Preventive Practices Status Report

*Prevalence rates are adjusted to 2000 US population

Injuries

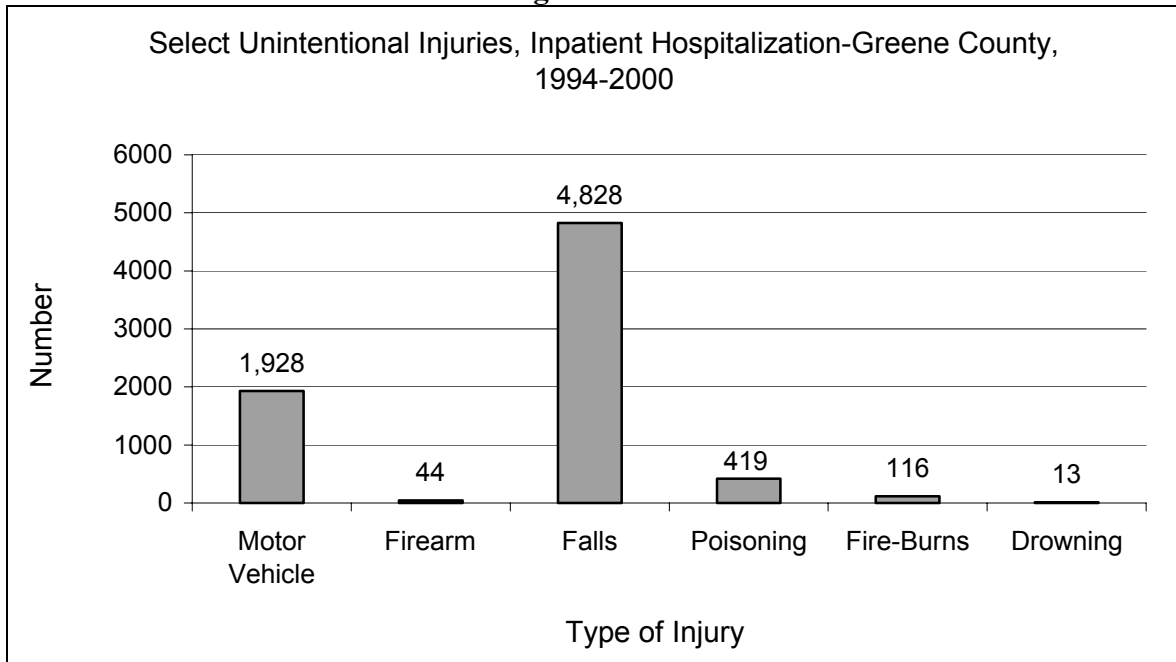
Figures 5.19 and 5.20 indicate the number of unintentional injuries by cause in Greene County for emergency room visits and inpatient hospitalizations.

Figure 5.19



Source: Missouri Department of Health and Senior Services, total injuries=205,203

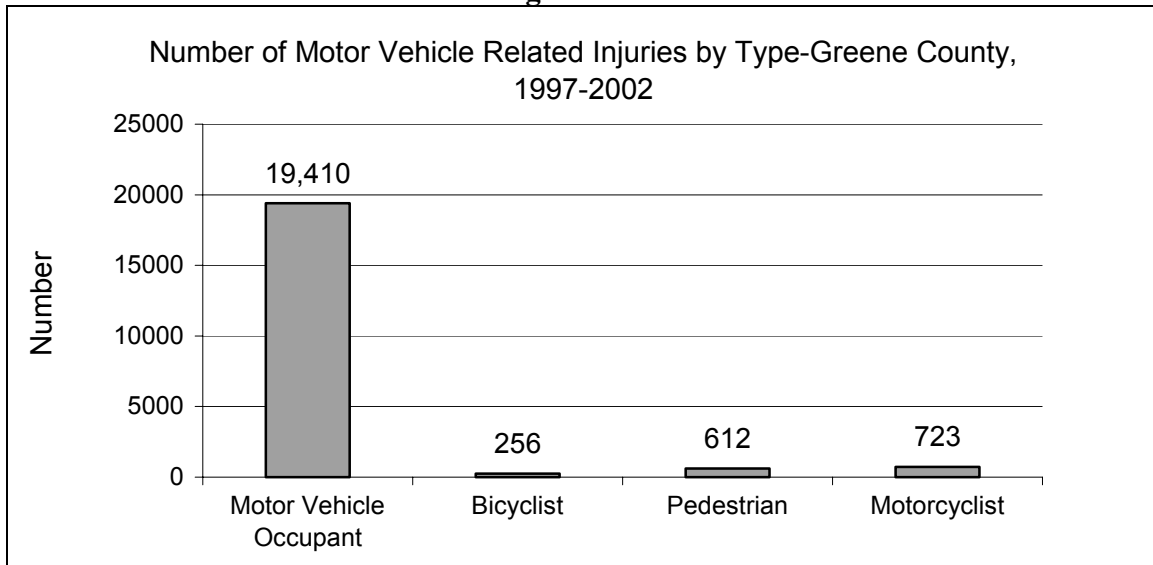
Figure 5.20



Source: Missouri Department of Health and Senior Services

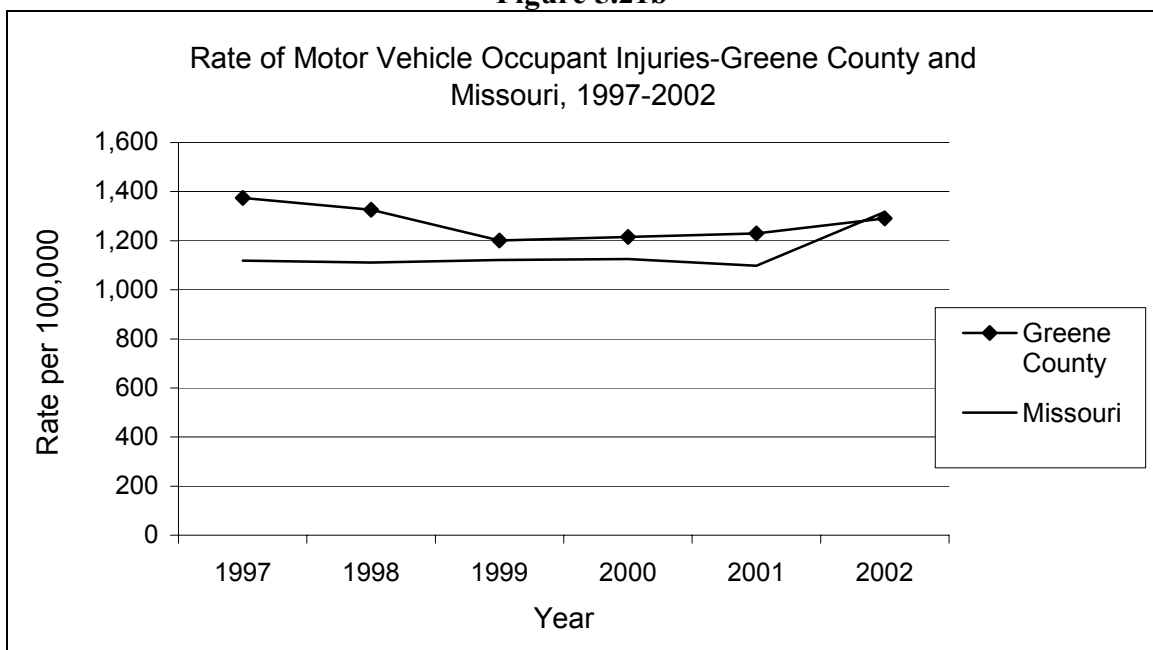
The numbers of motor vehicle injuries in Greene County by type are shown in Figure 5.21a. Pedestrian and bicyclist injuries involving a motor vehicle accounted for 3.8% of all injuries related to motor vehicles during this time, while 3.2% of injuries involved motorcycles.

Figure 5.21a



Source: Missouri Department of Health and Senior Services, n=22,856

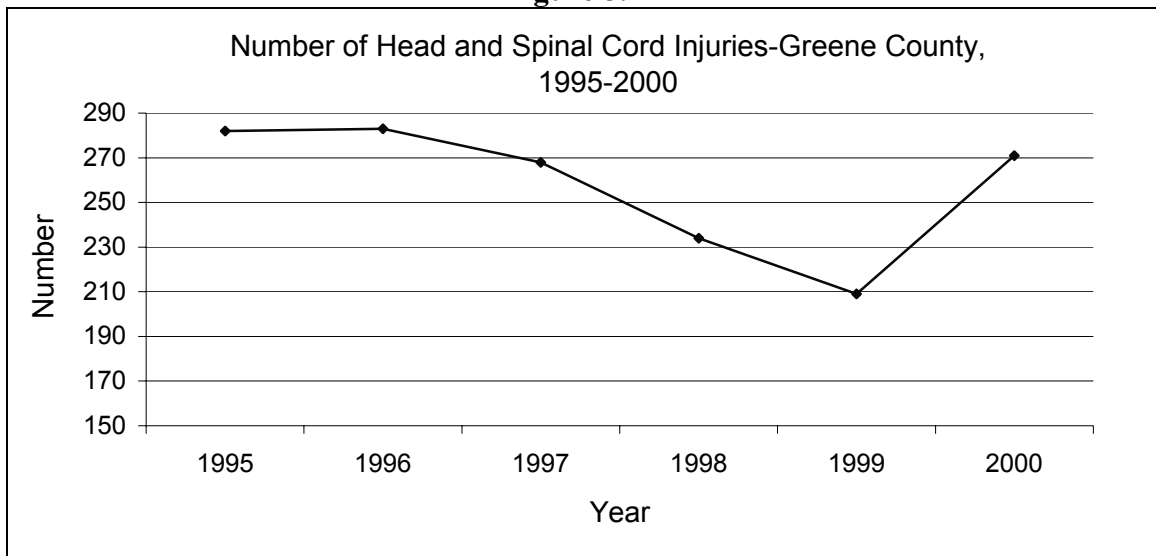
Figure 5.21b



Source: Missouri Department of Health and Senior Services

Head and spinal cord injuries decreased from 282 injuries in 1995 to 209 in 1999, but increased during the year 2000.

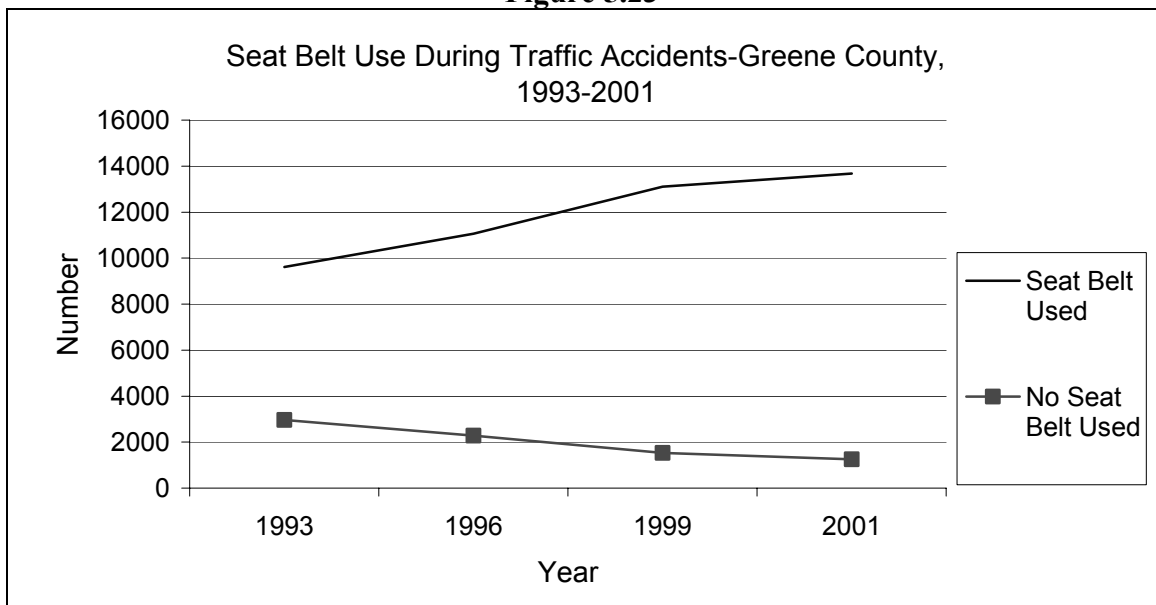
Figure 5.22



Source: Missouri Department of Health and Senior Services

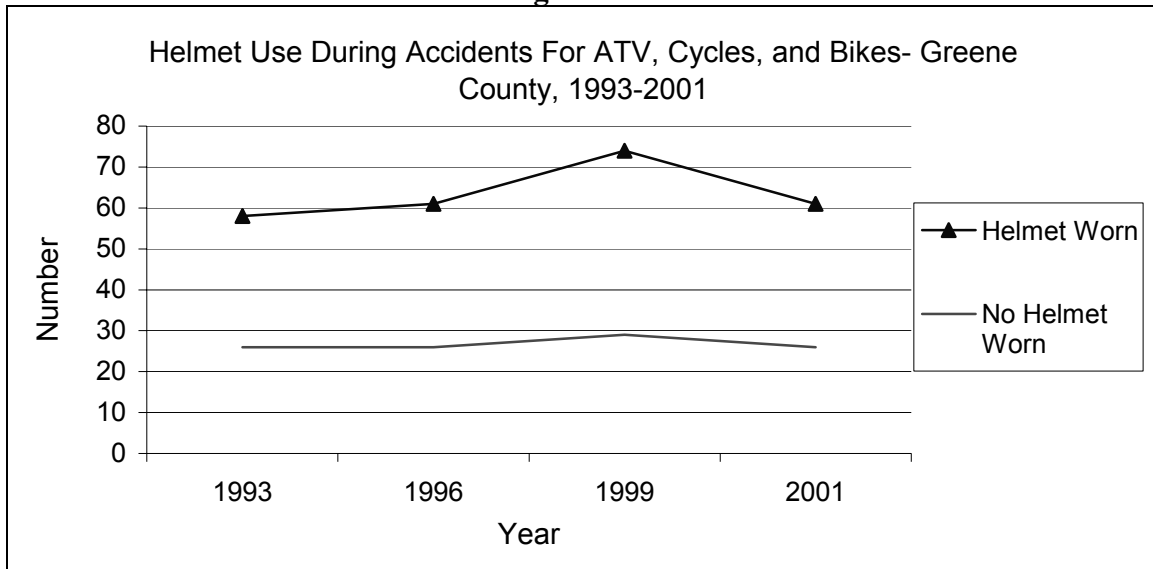
The number of people involved in accidents who were wearing seatbelts has also increased since 1993 (Figure 5.23). Injuries and helmet use for motorcycle, ATV, and bike accidents are shown in Figure 5.24.

Figure 5.23



Source: Missouri Department of Health and Senior Services

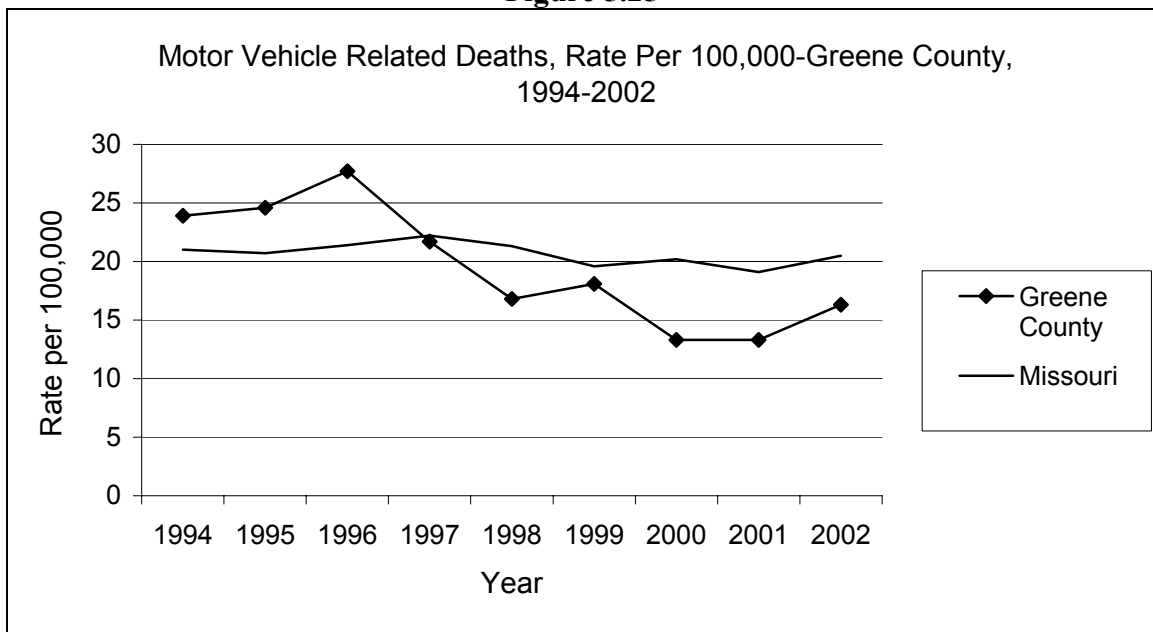
Figure 5.24



Source: Missouri Department of Health and Senior Services

Figure 5.25 indicates a significant downward trend in motor vehicle deaths in Greene County from 1996 to 2001. This downward trend has placed the rate of death by motor vehicles in Greene County below the Missouri rate.

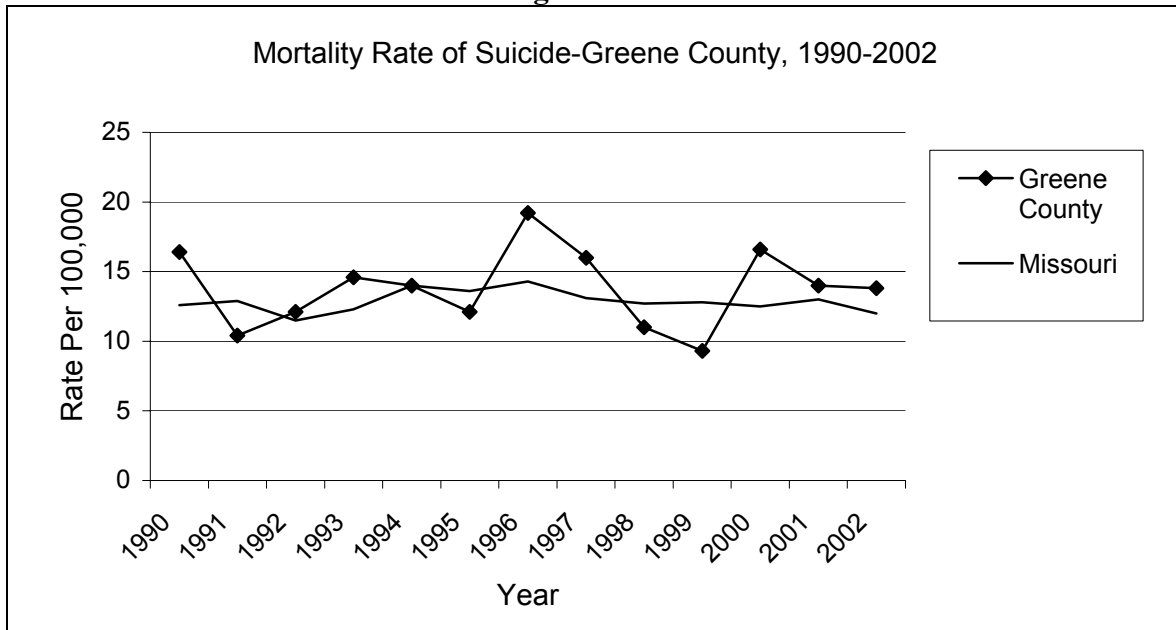
Figure 5.25



Source: Missouri Department of Health and Senior Services

The suicide mortality rate per 100,000 is illustrated in Figure 5.26. The Greene County rate has fluctuated from a high of 19.3 per 100,000 in 1996 to a low of 9.3 in 1999.

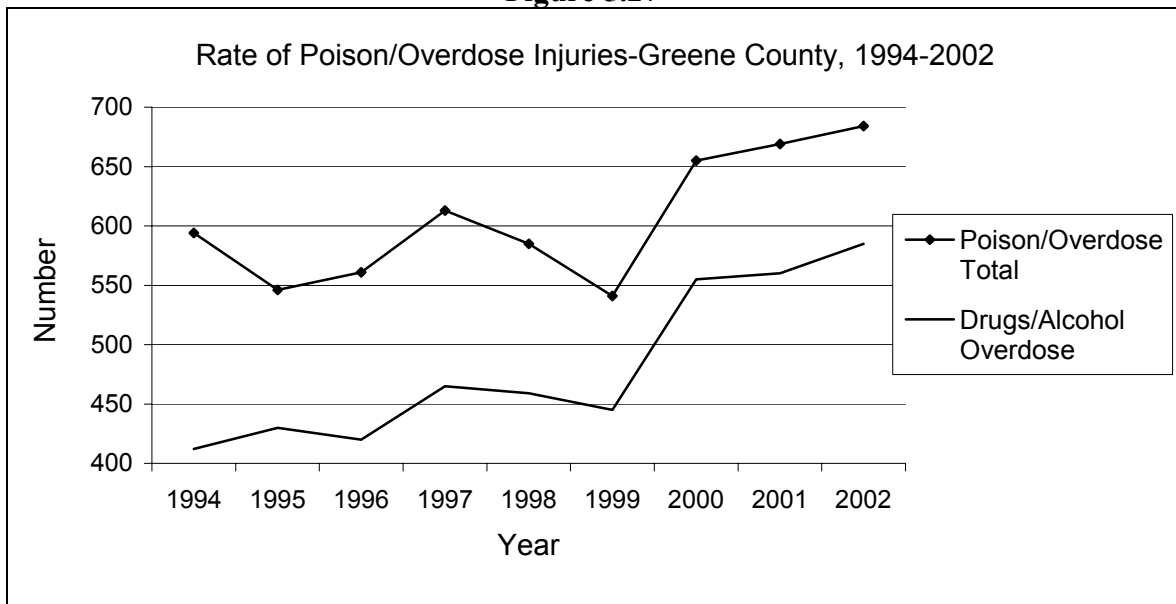
Figure 5.26



Source: Missouri Department of Health and Senior Services

The number of poison/overdose injuries in Greene County has increased since 1994, with 669 poison injuries reported in 2001 and 684 poison/overdose injuries in 2002 (Figure 5.27). The number of drug and alcohol injuries has also increased with 585 overdose injuries in 2002.

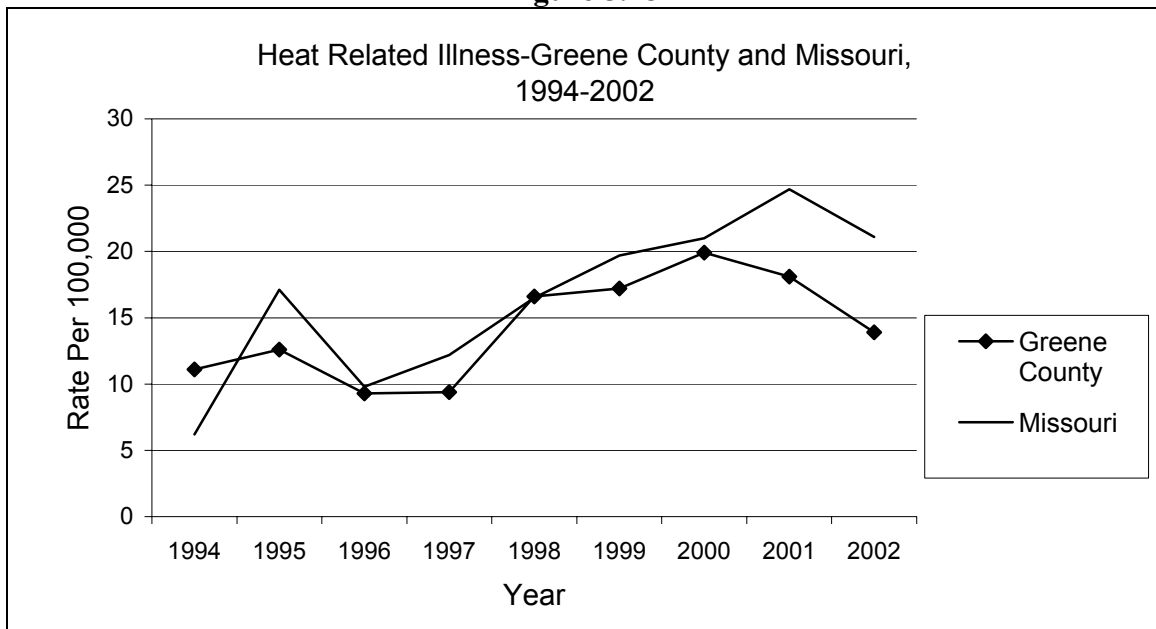
Figure 5.27



Source: Missouri Department of Health and Senior Services

Heat related illness injuries have decreased since the year 2000 to a year 2002 rate of 13.9 per 100,000 (Figure 5.28).

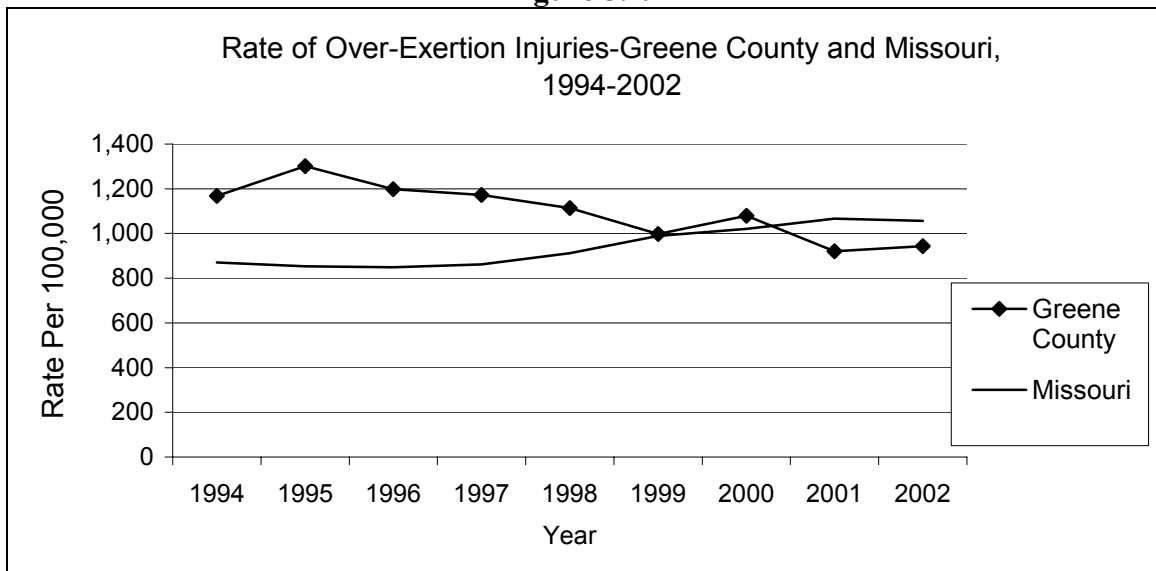
Figure 5.28



Source: Missouri Department of Health and Senior Services

Figures 5.29 and 5.30 identify the trends concerning over-exertion injuries. Greene County's rate of over-exertion injuries was higher than the state rate from 1994 to 1998. But, these injuries have been decreasing so that Greene County's rate of injury is now lower than the state rate, as observed in Figure 5.29.

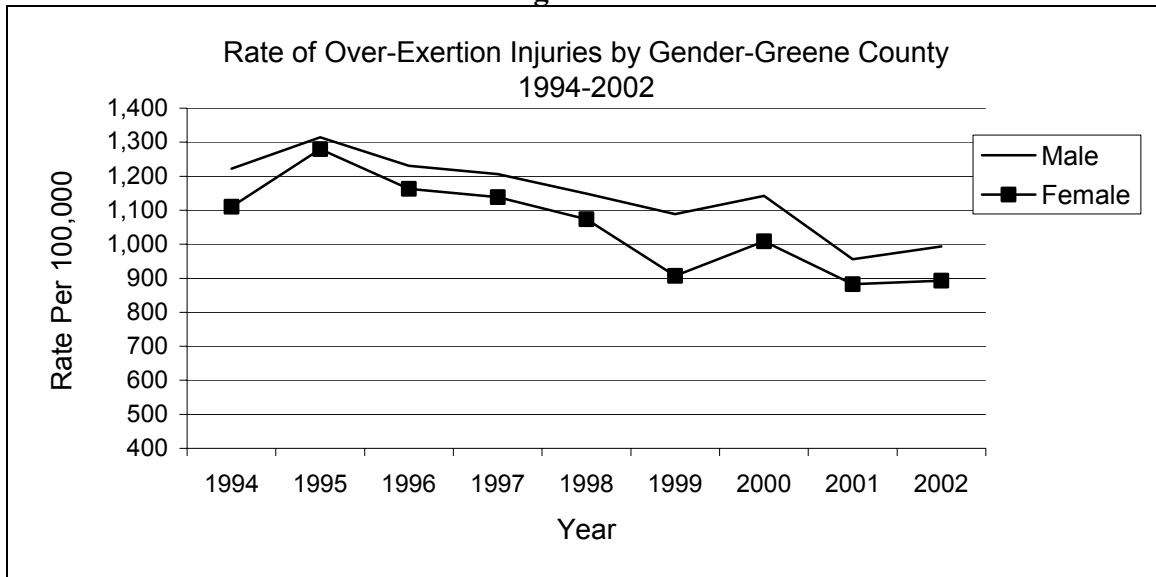
Figure 5.29



Source: Missouri Department of Health and Senior Services

Over-exertion injuries by gender are plotted in figure 5.30. The rates for both genders have been decreasing since 1995. However, males continue to experience higher rates than females.

Figure 5.30



Source: Missouri Department of Health and Senior Services

For More Information, Please Refer to These Works Cited and Consulted

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“Never eat more than you can lift.”
Miss Piggy--The Muppet Show

“Thou shouldst eat to live; not live to eat.”

Socrates

“What we’re saying today is that you’re either part of the solution or you’re part of the problem.”

Eldridge Cleaver

“There's a fine line between fishing and just standing on the shore like an idiot. ”

Steven Wright

“Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing ever happened. ”

Sir Winston Churchill